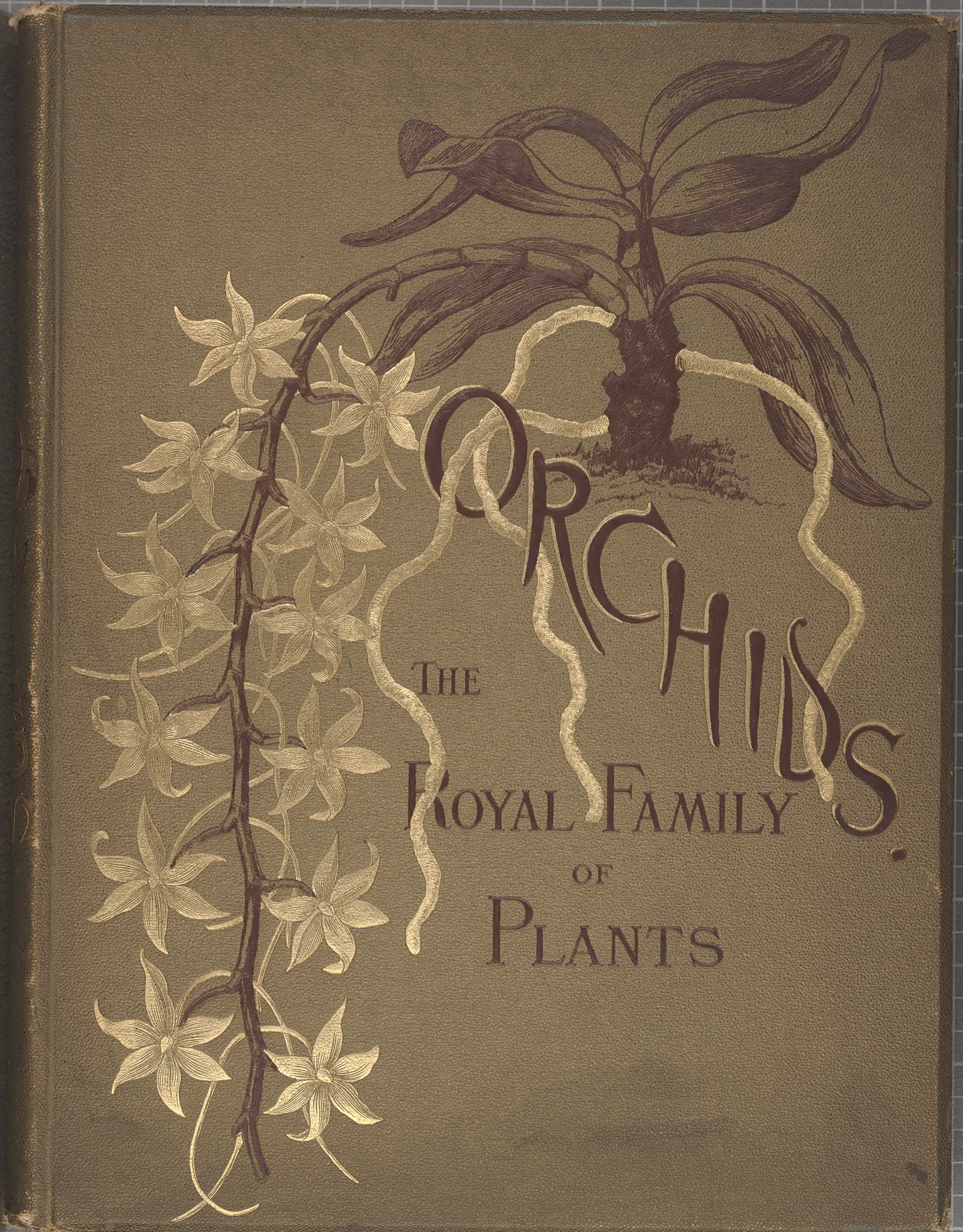
ORCHIDS
THE
ROYAL FAMILY
OF
PLANTS

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ORCHIDS

THE

ROYAL FAMILY OF PLANTS

WITH ILLUSTRATIONS FROM NATURE

BY

HARRIET STEWART MINER

"And yet I say unto you, that even Solomon, in all his glory, was not arrayed like one of these"

BOSTON
LEE AND SHEPARD PUBLISHERS
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1885

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ORCHIDS.

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INTRODUCTION.

THIS royal plant-family of ancient Grecian name,—*'ορχις*—whose structure and leading characteristics the following pages are designed to illustrate, is part of the world's flora until recently little known in this country. The singularly curious features of many varieties, and the exquisite beauty or fragrance of others, have rapidly and widely, since their introduction from abroad, attracted the admiration of students in natural history, and of all lovers of flowers.

One of our most enthusiastic and thoroughly capable florists justly says: "Orchids are the *élite* of the floral kingdom. The flowers are, without exception, the most curious and beautiful in nature. Their qualities, taken separately, would give eminence to a race of plants; the singularity of their shapes, their delicate and aromatic odors, and the richness and variety of their colors,—all being different from anything we elsewhere meet."

This weird and wonderful plant has its natural habitat chiefly in the tropics, the most beautiful of the species coming from the East Indies; but the orchidaceæ are found in all warm and moist latitudes, and in nearly all localities, except such as are extremely dry and cold. A few varieties are found as far north even as the Canadas.

Scientific research has as yet discovered but few economical or practical uses of the orchid. A single variety, indeed, produces the vanilla of commerce, a highly valuable flavoring substance. The tubers of several species furnish a mucilaginous substance, named by the Turks *salep*, which is nutritious and is used for food. A number of varieties give choice perfumes; and a very few plants are understood to have a recognized place in the Materia Medica. But we need not doubt that future investigations will in due time furnish proofs of other uses for this strangely beautiful family of the world's flora.

The Author gratefully acknowledges the kindness of Major Alexander H. Davis, of Syracuse, N. Y., and the kindness of Frederick L. Ames, Esq., of North Easton, Mass. (as well as that of their very capable and obliging florist gardeners, Messrs. H. Youell and W. Robinson), for free access to their splendid collections of plants and flowers.

H. S. M.

The designs of the artist have been engraved on stone and reproduced in colors by the Hatch Lithographic Company of New York.

Outline of the Orchid Flora.

This great family is divided into two general classes, of which the first live upon trunks and branches of trees, on blocks of dry wood, and even on stones, receiving nourishment from the air. These are named *Epiphytes*, a Greek word signifying plants which grow upon other plants, but do not penetrate their substance or absorb their juices. The other general class, fewer in number, is named *terrestrial*, and comprises such as grow in and upon the soil, like vegetation generally.

These two classes are distributed into seven orders or tribes, namely:—

1st	Tribe.	Malaxeæ: i. e. *Softness* or *Waxy Softness.*
2d	"	Epidendreæ: Something growing *upon Trees.*
3d	"	Vandeæ: Sanskrit for Mistletoe, or Tree Orchid.
4th	"	Ophreæ: The *Eyebrows;* referring to the ancient fashion of painting the eyebrows.
5th	"	Arethuseæ: From the name of a *nymph* of Diana, fabled to have been transformed into a fountain.
6th	"	Neotteæ: *A Bird's Nest.*
7th	"	Cypripedeæ: *Venus's Slipper.*

The most beautiful and valued of the whole great family of orchids are found in the first, second, third, and seventh tribes; and nearly all these are Epiphytes, excepting the Cypripedeæ.

"The flowers of all orchids" (we quote now from the last and very recent issue of the "Encyclopædia Britannica"), "though extremely diverse within certain limits, and superficially very different from those of other monocotyledons, are all formed upon one common plan, which is only a modification of that observable in such flowers as the narcissus or snowdrop.

"The conformation of those flowers consists, essentially, in the presence of a six-parted perianth, the three outer segments of which correspond to a calyx, and the three inner ones to a corolla. These segments spring, apparently, from the top of the ovary; the real explanation, however, being that the end of the flower-stalk or thalamus, as it grows, becomes dilated into a sort of cup or tube closely enclosing and adhering to the ovary, so that the latter organ appears to be beneath the perianth, instead of above it, as in a lily.

"Within the perianth, and springing from its sides, are six stamens, whose anthers contain pollen grains. These stamens encircle a style which is the upward continuation of the ovary, and which shows at its free end traces of the three originally separate but now blended carpels of which the ovary consists.

"A main distinguishing feature is, that one of the inner pieces of the perianth becomes in course of its growth much larger than the rest, and usually in texture, color, and form, has a distinct name,—*lip* or labellum."

HYMN TO THE FLOWERS.

'Neath cloistered boughs, each floral bell that swingeth
And tolls its perfume on the passing air,
Makes Sabbath in the fields, and ever ringeth
A call to prayer.

There — as in solitude and shade, I wander
Through the green aisles, or, stretched upon the sod,
Awed by the silence, reverently ponder
The ways of God.

Your voiceless lips, O Flowers, are living preachers,
Each cup a pulpit, and each leaf a book,
Supplying to my fancy numerous teachers
From loneliest nook.

"Thou wert not, Solomon! in all thy glory,
Arrayed" the lilies cry, "in robes like ours;"
How vain your grandeur! Ah, how transitory
Are human flowers!

Posthumous glories! angel-like collection!
Upraised from seed or bulb interred in earth,
Ye are to me a type of resurrection,
And second birth.

Were I, O God, in churchless lands remaining,
Far from all voice of teachers or divines,
My soul would find, in flowers of thy ordaining,
Priests, sermons, shrines!

HORACE SMITH.

DENDROBIUM. (*Life-giving Tree.*)

This name represents a very large variety in the first of the seven tribes of Orchids. They originated chiefly in the East Indies. They grow upon trees and even rocks; that is, they are epiphytes. Some of the species are deciduous, having the peculiarity of dropping their leaves before blossoming, while others are accounted evergreens. They are among the most beautiful of the orchidaceæ; by newly discovered varieties they are every year increasing, and there is hardly one that is not worth growing, though some in blossom are not showy.

This family is understood to have been discovered and named by a German botanist, Schwartz; he having first and specially noticed the flowers hanging from and even overspreading trees in some forests of the Orient. Hence he sought to affix a name that would express the idea of life-bearing or *Life-giving Tree.*

The name *Dendrobium* is from the Greek *Δένδρον*, a tree, and *Βίος*, life; and the word has here the Latin termination, as is common in botanical uses. The names given to flowers have generally (as is apparent in the following pages) been designed to point out some particular feature of the plant, or were given on account of some economical use, or out of respect to the discoverer, or in compliment to an eminent patron.

PLATE I. DENDROBIUM DEVONIANUM.

DENDROBIUM DEVONIANUM.

The adjunct *Devonianum*, marking this variety, — which is represented by Plate No. I, — is affixed as a compliment to the sixth Duke of Devonshire, who was a generous promoter of botanical science, and in whose famous gardens at Chatsworth the new plant first blossomed in 1840. This variety is understood to have been originally found by Mr. John Gibson, — who was the Duke's collector of foreign plants, — hanging from trees in dense forests of the Khasya Hills, India, which are 4,500 feet above the sea level.

Immediately before the appearance of bud or blossom, this plant much resembles a group of dried sticks; for a singularity is, that, having made its annual growth, the leaves drop off; the stalks appear for a brief space to be dead, and then start out and unfold exceedingly attractive blossoms. No one unacquainted with it would conceive the possibility of luxuriance and beauty growing out of such unsightly and hopeless stalks.

This variety blossoms in summer, and is a free bearer; for the author has seen in the orchid house of Mr. Ames, of North Easton, Mass., a single plant bearing seventy-five flowers.

What prodigies can power divine perform
More grand than it produces year by year,
And all in sight of inattentive man?
Familiar with th' effect we slight the cause,

And, in the constancy of Nature's course,
The regular return of genial months,
And renovation of a faded world,
See, not to wonder at. . . . .
All we behold is miracle; but, seen
So duly, all is miracle in vain.
Where now the vital energy that moved,
While summer was, the pure and subtile lymph
Through th' imperceptible meandering veins
Of leaf and flower? It sleeps; and th' icy touch
Of unprolific winter has impressed
A cold stagnation on th' intestine tide.
But let the months go round, a few short months,
And all shall be restored. These naked shoots,
Barren as lances, among which the wind
Makes wintry music, sighing as it goes,
Shall put their graceful foliage on again,
And, more aspiring, and with ampler spread,
Shall boast new charms, and more than they have lost.
Then each, in its peculiar honors clad,
Shall publish even to the distant eye
Its family and tribe. . . . .
The beauties of the wilderness are His
That makes so gay the solitary place,
Where no eye sees them. And the fairer forms
That cultivation glories in are His.
He sets the bright procession on its way,
And marshals all the order of the year;
He marks the bounds which winter may not pass,
And blunts its pointed fury; in its case,
Russet and rude, folds up the tender germ,
Uninjured with inimitable arts;
And, ere one flowery season fades and dies,
Designs the blooming wonders of the next.

COWPER.

PLATE II. DENDROBIUM AINSWORTHII.

DENDROBIUM AINSWORTHII.

THIS variety — represented in Plate No. II. — is a hybrid, a cross between *D. nobile* and *D. heterocarpum*, and is considered one of the choicest and most desirable of the family. It was grown by Mr. Mitchell, gardener for Dr. Ainsworth, of Manchester, England, whose name the plant bears.

Our drawing could present but a small part of the whole thrifty growth of this variety, or its multiplied buds and blossoms, its stalks being two feet in length. Some of them present a metallic appearance also, not easily represented by colors.

At the Boston Horticultural Fair, in 1883, Mr. Robinson, gardener for F. L. Ames, Esq., took the highest prize for the finest specimen of this variety of Dendrobe seen or known in this country. It was indeed a noble specimen; but one needs to see the whole plant to appreciate its real beauty.

It is not easy to speak truly and fully of this royal plant family without appearing to use the language of exaggeration. Baron Humboldt, the great naturalist, relates that "such is their number and variety in valleys of the Peruvian Andes, that the entire life of an artist would be too short to delineate all the magnificent forms adorning those deep recesses."

Credible travellers in Brazil report that the "monkeys swing, leap, climb, and chatter in the tops of trees, surrounded by thousands of twisting and drooping orchids, breaking out into golden yellows to be dreamed of, into wonderful chocolates and the most delicate lilacs."

One can readily believe that a sight of the magnificent growths, the rare fruits and endlessly variegated orchid beauties overspreading all, in semi-tropical forests and valleys, must give a sense of reality to the picture fancied by the great English poet as the Eden of our first parents:—

> Thus was this place
> A happy rural seat of various view,—
> Groves whose rich trees wept odorous gums and balm;
> Others whose fruit, burnished with golden rind,
> Hung amiable, Hesperian fables true,
> If true, here only, and of delicious taste:
> Betwixt them lawns, or level downs, and flocks
> Grazing the tender herb, were interposed;
> Or palmy hillock or the flowery lap
> Of some irriguous valley spread her store,
> Flowers of all hue, and without thorn the rose.

More of these orchid plants are already known than exist of all the different grasses. What has brought to pass the extraordinary diversity in this grand flora is not only a curious question, but, since the botanical experiments and researches of our own days,—especially those of the eminent English naturalist, Mr. Darwin,—a subject of fascinating interest. We may safely say, no doubt, that very great changes of beautiful color, fragrance, and curious form, as well as still multiplying varieties of orchids, have resulted largely from three causes:—

1. From climatic changes through which this earth has passed during unknown thousands of ages. It will not be questioned that the present Arctic region once enjoyed semi-tropical warmth, at least; while what are now the temperate latitudes anciently and long endured, more or less, the rigors of a glacial age.

2. Great changes in the structure and coloring of flowers have been wrought by what may be termed chance and artificial hybridizing.

3. Very many curious and even grotesque modifications have been effected by cross-fertilization through the agency of insects. This topic will receive further consideration on subsequent pages, and more appropriately when we come to speak of the Cypripedium.

Until within a few years the general public — and scholars even supposed that trees and shrubs and flowers had been always from their creation the same; that daisies had ever been what daisies now are; that the crocus, primrose, dandelion, etc., had never been but what they are to-day. Truer views of nature are accepted now. The luscious strawberry can be traced back to an insignificant cinquefoil as its ancient parent. Our plum is only a cultivated variety of the blackthorn. All learned men agree that, after our earth began to be clothed with vegetation, plants were few, and flowers very small and inconspicuous, consisting probably of a single stamen and a single pistil each.

Not now to go further back than the well-known history of the Amaryllids, these may be termed tubular lilies. The Iris family are a similar but rather more advanced species; and a small further growth or progress, might bring us to the Gladiolus. We now quote verbatim from the admirable little work of Grant Allen, entitled "Flowers and their Pedigree."

"From these the step is not great to the orchids, undoubtedly the highest of all the trinary flowers, with the triple arrangement almost entirely obscured, and with the most extraordinary

varieties for the adaptation to fertilization by bees or by humming-birds, in the most marvellous fashions. Alike by their inferior ovary, their bilateral shape, their single stamen, their remarkable forms, their brilliant colors, and their occasional mimicry of insect life, the orchids show themselves to be by far the highest of the trinary flowers, if not indeed of the entire vegetable world."

PLATE III. DENDROBIUM NOBILE.

DENDROBIUM NOBILE.

This variety, characterized by name as *noble, grandly fine,* — represented by Plate No. III., — is a native of Assam, in China, a useful plant for winter decoration, of easy culture, and valuable, too, for color and fragrance. Its numerous and jointed stalks, often two feet long, when thrifty, blossom at nearly every joint. It blooms in winter and spring.

"In the extensive genus of *Dendrobium*," says an American florist, Mr. Henderson, "we are presented with some truly magnificent epiphytes, which, regarded either for their singular manner of growing, graceful or grotesque habits, and large, handsome, richly-scented flowers, are perhaps unsurpassed in the entire range of vegetable forms. And they may be divided into two sections, the pseudo-bulbous class and those with tall, bulbous stems. Many of the former are extremely small compared with the splendid flowers they produce, and, from this circumstance, are usually grown on blocks of wood or cork, lest the young shoots receive injury from excessive moisture.

"Those belonging to the other section are again divisible. The upright-growing, such as *D. nobile*, make the best appearance when cultivated in pots and trained by the aid of stakes. Plants of pendant and trailing habit (like the *D. macranthum*) should be grown in baskets suspended from the roof of the house.

"The genus *Dendrobium* consists of two hundred varieties, of which eighty and more are naturalized in our greenhouses, and some of them are grown to an extent that warrants their use as

cut flowers. [This was all true some years since.] The *D. nobile* blossoms freely during the winter, and is one of the very few orchids that will grow and blossom quite well in ordinary sitting-rooms."

The hand that gives the angels wings,
  And plants the forests by its power,
O'er mountain, vale, and champaign flings
  The seed of every herb and flower;
Nor forests stand nor angels fly
More at God's will, more in his eye,
Than the green blade strikes down its root,
Expands its bloom, and yields its fruit.

How camest thou hither? From what soil,
  Where those that went before thee grew,
Exempt from suffering, care and toil;
  Clad by the sunbeams, fed with dew?
Tell me on what strange spot of ground
Thy rock-borne kindred yet are found,
And I the carrier-dove will be
To bring them wondrous news of thee.

MONTGOMERY.

We insert here an appropriate extract from a delightful book by the Rev. W. C. Gannett, entitled "A Year of Miracle."

"What would summer be without the flowers? And yet summer with flowers is a modern improvement. For ages and ages, through far the greater part of its life, thus far, a flowerless earth has turned its sombre face up to the sun. It had not learned to smile. Even the summers of the ages to which we owe our coal-beds had no flowers, no fruit-blossoms, no grass, and of course no bees and no song-birds, in them! All the plants, wise men say, were like our ferns, or club-mosses, or meadow-

horsetails,—only 'there were giants in those days,'—or else like our cone-bearing trees, all reproducing in the secret way ferns still know, or the quiet way pine-cones have. Not till long ages afterward did the Junes bear blossoms.

"Thinking of that, we can hardly say the '*good* old times.' We thank Heaven that the birds and flowers came before us. Indeed the earth had to be ripe for them before it could be ripe for us. So here we are to-day; and the whole land, all summer through, laughs for us in grass and flowers,—that peal beginning in the anemones and violets, rising into roses, and ending in the golden rod and asters. Great tribes of beings have been already born, and others are on their way to life, for peopling this planet with color and beauty.

"Flowers and art! flowers and poetry: we must now add, the flowers and science; for in the flowers a name is written, and to-day that name is found to have been written from the beginning in all things that are. All things *grow.* The flower is type of the universe, and the lily of the field is sowing afresh for us the problems of creation."

We linger at the vigil
  With him who bent the knee
To watch the old-time lilies
  In distant Galilee;
And still the worship deepens,
  And quickens into new,
As, brightening down the ages,
  God's secret thrilleth through.
The flower-horizons open,
  The blossom vaster shows,
We hear the wide world's echo,
  "See how the lily grows!"

MASDEVALLIA.—*For Don Jose Masdevall.*

This genus, belonging to the second tribe, has its title from a Spanish botanist, whose name is printed above. It includes an extensive variety of epiphytal orchids, natives chiefly, of the Cordilleras or mountain ranges of South America. These were but poorly represented in orchid collections till about fifteen years ago, when Messrs. James Veitch & Son, of England, obtained living specimens from Peru. Since that time, new varieties have steadily continued to be imported, notwithstanding many difficulties connected with the removal of these small bulbless plants from cool, moist homes in their native highlands, through warm valleys, and across the seas.

Leaves in the wild specimens exceed a foot in length, producing a raceme (a form of inflorescence very common in orchids) of six or eight flowers, which issue, one above another, from sheathing bracts. The flowers have a short cup, with spreading sepals; all with long yellow tails, the broader portions of them closely dotted over with fine reddish-brown spots; petals and column being white, the lip yellow.

M. Roezl, an eminent orchidist, states that he found, in the mountains near Ocana, the Masdevallia growing by hundreds of thousands amid low shrubs.

Plate IV.
Masdevallia Veitchii.

MASDEVALLIA VEITCHII.

This variety, represented by Plate No. IV, — named in compliment to the eminent English florists, is a native of Peru. It blossoms in February and March. The specimen here presented is from the greenhouse of Mr. Ames, of North Easton, Mass., and is a good example of those classed as "cool orchids," requiring a lower temperature than most other species.

These flowers are not so much chosen by amateurs (or for companionship in these pages), on account of especial beauty, as for their strangely curious or grotesque appearance. Some of the Masdevallia take on resemblances of the spider, or look much like long-legged insects of different kinds. The object of their collection in orchid-houses seems to have been to present a distinct phase of the singular and odd features to be occasionally found in this great and wonderful family.

Since these pages were begun, however, we are informed that a new impulse has been given and a deep interest, recently manifested among orchid-growers, in this species, as a result of the importation and growth of Masdevallias of uncommon attractiveness and beauty.

There is a lesson in each flower,
A story in each stream and bower;
On every herb on which you tread
Are written words which, rightly read,
Will lead you from earth's fragrant sod
To hope — to holiness — to God.

Such true poetry in prose as the subjoined extract, — though not specially related to the Masdevallia, — may justly have place anywhere in the literature of plants and flowers: —

"These last words, linking leaves, limbs, and blossoms, touch the deepest flower-secret that has thus far been discovered. School-boys know it now; but the wisest men were just knowing enough a century ago to guess it. It is the secret that botanists call 'metamorphosis:' the secret that each and every organ of the flower is but a transformed leaf; that bud-scale and bract, sepal and petal, stamen and pistil, back to the new bud-scale, in spite of all the difference of their forms, and all their varied tints, — are but successive *leaf transfigurations.* Economic Nature gets her new effects, not by selecting new themes, but by playing variations on the old themes. When she would make a blossom on an apple-tree, or on a pasture weed, she only shortens and alters what would else have been a common leafy branch.

"But not content with such transfiguration, the mother of all beauty takes up the separate organs, and tenderly carries out her variations on each one. She bears fixed laws in mind, and never really forgets her arithmetic, — the rules of twos and threes and fours and fives; but by multiplying parts, by dividing parts, by joining them at this place on their edges, then on that; by enlarging some, and making others smaller; by their complete abortion sometimes; by moulding horns and cups; by unfurling wings, by hanging bells, by ravelling fringes out, — by all sorts of dainty devices of sculpture, she makes the myriad distinct species of miracles that men stare at untiringly, as the flowers of spring. It is rare luck to turn up from the soil of some classic land fragments of a marble statue of old beauty. But Nature flings her

carvings everywhere, — each one complete and fresh and perfect for its niche; and such a joy, that, were it the only one of its race, it would draw people into pilgrimages for its worship." — REV. W. C. GANNETT.

CATTLEYA. — *For William Cattley.*

This very numerous genus in the second tribe of orchids, bears the name of an eminent English florist. And quite a number of varieties of this same species or genus, have received, in compliment, the names of other cultivators and patrons. It is an epiphyte, originating in Brazil and Mexico. One European collection is reported to contain six hundred different varieties of the Cattleya.

"What the rose and lily are among garden flowers," says Mr. Henderson, "the Cattleya is among orchids, — pre-eminently beautiful. Not a specimen but possesses strong claims on the florist's attention, for its delicate loveliness, and the rich and vivid coloring of its large flowers. Being natives of the temperate parts of South America, their cultivation better succeeds in a lower temperature than is necessary for a majority of plants of the same order. They grow on billets of wood, in pots or baskets. They are increased by division of the roots. The flowers present all shades of rose, rosy-lilac, crimson, carmine, and ruby-purple."

The four varieties drawn from nature, on the next following pages, were from the greenhouse of Major Alexander H. Davis, of Syracuse, N. Y.

Plate V. Cattleya Trianæ.

CATTLEYA TRIANÆ.

This variety, — represented in Plate No. V., — a native of New Granada, was named in compliment to Signor Triana, a large collector of orchids in that province. It blossoms in winter.

It need hardly be said that this variety is considered on all hands, one of the richest and most splendid of floral beauties. It is not, indeed, superior to the *C. Mossiæ*, but by many is preferred, because it blooms in winter.

In the finely appointed orchid-house of Mr. Corning, of Albany, there are, at the holiday seasons, hundreds of these Cattleya Trianæ in full blossom. In presence of this floral magnificence, beholders might imagine that they had gained a glimpse of the true Eden, of "many mansions," —

> Where everlasting spring abides
> And never-withering flowers;

which Elizabeth Stuart Phelps has so ingeniously sought to describe to us, as being just "Beyond the Gates."

> We are the sweet flowers,
> Born of sunny showers,
> (Think, when e'er you see us what our beauty saith;)
> Utterance, mute and bright,
> Of some unknown delight,
> We fill the air with pleasure, by our simple breath:
> All who see us love us —
> We befit all places;
> Unto sorrow we give smiles, and unto graces, races.

Think of all these treasures,
Matchless works and pleasures,
Every one a marvel, more than thought can say;
Then think in what bright showers
We thicken leaf and bowers,
And with what heaps of sweetness half stifle wanton May;
Think of the mossy forests
By the bee-birds haunted
And all those Amazonian plains, lone lying as enchanted.

Oh! true things are fables,
Fit for sagest tables,
And the flowers are true things — yet no fables they;
Fables were not more
Bright, nor loved of yore —
Yet they grew not, like the flowers, by every old path way;
Grossest hand can test us —
Fools may prize us never —
Yet we rise, and rise, and rise — marvels sweet for ever.

Who shall say that flowers
Dress not heaven's own bowers?
Who its love, without us, can fancy — or sweet floor?
Who shall even dare
To say we sprang not there —
And came not down, that Love might bring one piece of Heaven the more?
Oh, pray believe that angels
From those blue dominions
Brought us in their white laps down, 'twixt their golden pinions.

LEIGH HUNT.

Plate VI. Cattleya Chocoensis.

CATTLEYA CHOCOENSIS.

This variety — represented in Plate No. VI. — is a native of the Province of Choco, in the United States of Colombia. It is somewhat rare, though a favorite with florists; especially desirable on account of its winter blossoming.

It is not easy to present in the drawing, the full beauty of this flower, because of its drooping habit and the shutting or closing tendency of its petals. The Chocoensis is of delicious fragrance; not showy, perhaps, as the *C. trianæ*, but justly to be prized for its fine perfume.

Sweets of the wild! that breathe and bloom,
On this lone tower, this ivied wall;
Lend to the gale a rich perfume,
And grace the ruin in its fall;
Though doom'd, remote from careless eye,
To smile, to flourish, and to die,
In solitude sublime:
Oh! ever may the spring renew
Your balmy scent and glowing hue,
To deck the robe of time!

Breathe, fragrance! breathe, enrich the air,
Though wasted on its wing unknown!
Blow, flow'rets! blow, though vainly fair,
Neglected and alone!
These flowers that long withstood the blast,
These mossy towers are mouldering fast,
While Flora's children stay —
To mantle o'er the lonely pile,
To gild destruction with a smile,
And beautify decay!

Sweets of the wild! uncultured blowing,
Neglected in luxuriance glowing;
From the dark ruins frowning near,
Your charms in brighter tints appear,
And richer blush assume;
You smile with softer beauty crown'd,
Whilst all is desolate around,
Like sunshine on a tomb!

Thou hear'st the zephyrs murmuring, dying;
Thou hear'st the foliage waving, sighing,
But ne'er again shall harp or song,
These dark deserted courts along,
Disturb thy calm repose:
The harp is broke, the song is fled,
The voice is hush'd, the bard is dead:
And never shall thy tones repeat,
Or lofty strain, or carol sweet,
With plaintive close!

Nor wilt thou, Spring! refuse to breathe
Soft odors on this desert air;
Refuse to twine thine earliest wreath,
And fringe these towers with garlands fair!

Sweets of the wild, oh! ever bloom
Unheeded on this ivied wall!
Lend to the gale a rich perfume,
And grace the ruin in its fall!

Thus, round Misfortune's holy head
Would Pity wreaths of honor spread;
Like you, thus blooming on this lonely pile,
She seeks despair, with heart-reviving smile!

MRS. HEMANS.

Until very recently, orchids were an expensive luxury. The Chocoensis was more costly than many other species; for this, with most others, our countrymen were obliged to import directly from English florists. The demand has now so increased, that American cultivators receive their plants in quantities direct from Brazil, Mexico, etc.

At public auction sales in England, not long ago, a very choice specimen of *C. Trianæ* sold for two hundred and fifty guineas, *i. e.*, nearly eleven hundred dollars. An original importation of the Ærides brought two hundred and thirty-five guineas. Some two or three years since, a choice *Cypripedium*, represented on these pages, was sold in this country for one hundred guineas. Recently, at auction sales in London, the highest price given for orchids was twenty-six guineas for an *Odontoglossum*. A fine Lælia brought seventy dollars; a *Phalenopsis Stuartiana* (a new variety, a drawing of which is found on these pages), brought thirty dollars. Now, very good plants of many different species can be had of agents in this country, at from three to five dollars apiece. And purchasers will be wise to pay a dollar or two more for good specimens, than purchase smaller plants, for whose blossoming they must wait long, — at less prices than those last named, because they are called cheap.

Travellers in different parts of the Orient had long known that there were many orchidaceæ of remarkably brilliant colors, singularly curious form, and of fine fragrance; but for many years they were only known to the horticultural world by preserved specimens, pressed out of shape, and withered. At length a few living plants were brought to England, but their proper treatment was not understood; they were kept alive for a season, but ere

long perished. In 1800, there is said to have been only a dozen poorly grown orchids in the greenhouses at Kew; and during the next twenty years, probably the addition of some fifty varieties comprised all that were possessed or known, in England at least.

From the year 1820 may be dated the real and gradually rapid progress of orchid culture. It was at this time that William Cattley, Esq., of Hertfordshire — (to whom has worthily been dedicated the noble species bearing his name, *Cattleya*), — by a thorough system of experimenting, discovered the true methods of cultivation. His success being made known, many followed, and amateurs began to stock their greenhouses with these new treasures. Orchid florists multiplied in the different states of Europe, and collectors were sent, at great cost, to the East and West Indies for new and rare species.

Knowledge of their cultivation and widely differing treatment is now so fully gained, that (as we are instructed by Mr. Rand), "the same species are found to grow equally well under very different modes of culture." Thus it is concluded that many orchid plants gradually, if not easily, adapt themselves to various conditions and treatment, and are not as capricious as was formerly supposed.

Plate VII. Cattleya Mossiæ.

CATTLEYA MOSSIÆ.

This choice specimen, — represented in Plate No. VII., — is a native of La Guayra, South America, and received its name in honor of Mr. Thomas Moss, an early cultivator of Liverpool, England.

Its blossom of exquisite coloring and finish, and the general appearance of the plant, resemble closely the *C. trianæ*, only the Mossiæ blooms in summer.

Great care and delicacy of treatment are essential in the cultivation of the Cattleyas, — as indeed all this is needful in most other varieties and species. Heat, ventilation, and moisture are three chief factors always. Not great heat, for experience has shown that many varieties do better in a lower temperature. Especially during a full season of rest, which Orchids must enjoy after blossoming, they should be given a somewhat cooler atmosphere.

An orchid-house, in which plants are growing, should smell sweet as a flowery meadow does during a sudden burst of sunshine after a summer shower. No dust, or cobwebs, or dry rubbish which could breed lice or vermin, must be permitted. One gardener said to us, "these varieties require as much care as a large family of children, and in bestowing such attention on the plants, we come to love them."

One thing should be emphasized for its importance, namely, the absolute necessity of cleanliness in order to raise flourishing plants. Frequent but careful washings with water are essential;

for, while all varieties require ablution for their leaves and stalks, blossoms, especially of the Cattleyas, if wet with but few drops of water, quickly become brown and decay. In large orchid-houses, men are constantly employed in washing these pets, even using soap at times.

Aye, "using soap." We can but be reminded, in this connection, of the old proverb, — that though "godliness is first in importance, cleanliness is the next." And it is noteworthy how very many of the moral inculcations addressed to men, find strikingly analogous duties required even in the vegetable kingdom.

Those who have become familiar with greenhouse scenes will see an appropriateness with preceding notes, we think, and enjoy the descriptive poem annexed: —

Who loves a garden, loves a greenhouse too.
Unconscious of a less propitious clime,
There blooms exotic beauty, warm and snug,
While the winds whistle and the snows descend,
The spiry myrtle with unwith'ring leaf
Shines there, and flourishes. The golden boast
Of Portugal and Western India there;
The ruddier orange, and the paler lime
Peep through their polish'd foliage at the storm,
And seem to smile at what they need not fear.
The amomum there with intermingling flowers
And cherries hangs her twigs. Geranium boasts
Her crimson honors; and the spangled beau,
Ficoides, glitters bright the winter long.
All plants of every leaf, that can endure
The winter's frown, if screen'd from his shrewd bite,
Live there, and prosper. Those Ausonia claims,
Levantine regions these; the Azores send
Their jessamine; her jessamine remote

Caffraria; foreigners from many lands,
They form one social shade, as if conven'd
By magic summons of the Orphean lyre.
Yet just arrangement, rarely brought to pass
But by a master's hand, disposing well
The gay diversities of leaf and flower,
Must lend its aid t' illustrate all their charms,
And dress the regular, yet various scene.
Plant behind plant aspiring; in the van
The dwarfish, in the rear retir'd, but still
Sublime above the rest, the statelier stand.

Much yet remains
Unsung, and many cares are yet behind,
And more laborious; cares on which depend
Their vigor, injured soon, not soon restored.
The soil must be renew'd, which, often wash'd
Loses its treasure of salubrious salts,
And disappoints the roots; the slender roots
Close interwoven, where they meet the vase
Must smooth be shorn away; the sapless branch
Must fly before the knife; the wither'd leaf
Must be detach'd, and, where it strews the floor,
Swept with a woman's neatness, breeding else
Contagion and disseminating death.
Discharge but these kind offices (and who
Would spare, that loves them, offices like these?),
Well they repay the toil. The sight is pleas'd,
The scent regal'd, each odorif'rous leaf,
Each opening blossom, freely breathes abroad
Its gratitude, and thanks him with its sweets.

COWPER.

CATTLEYA LODDIGESII.

This fine variety — represented by Plate No. VIII. — is a native of Brazil, and received its name in compliment to Mr. Conrad Loddiges, one of the earliest and most extensive orchid cultivators of the famous Hackney Nurseries, England.

This variety differs from others, in that the flower-spike, instead of bearing a single blossom, has from three to five. It blooms in August and September.

The "London Gardener's Chronicle" for April, 1884, contains a very surprising account of one of the Cattleyas found in Costa Rica. It was the variety known as the *Skinnerii*, and was the largest — in fact, the most wonderful — specimen ever seen growing. The plant was seven feet in diameter, and six feet high. Gentlemen at different times had sought to purchase this monster beauty of the natives, but in vain. At length, and but recently, Messrs. F. Sander & Co., of the south part of England, offered such a price that they became its possessors. The plant grew upon a large tree, whose trunk was cut just above and below it. The Cattleya, with the block of wood, weighed twelve hundred pounds, and M. Roezl counted upon it, at one time, fifteen hundred full blossoms. The whole was safely transported to Southampton, thence to St. Albans, England, where a new house has been built for its reception. It is suspended by a chain from the roof centre, where multitudes gaze upon the floral wonder with constant delight.

It is in place here to remark that numbers of the orchid family grow to enormous size, sending up stalks fifteen feet high. A few varieties are indeed but pigmies, — measured by a very few

PLATE VIII. CATTLEYA LODDIGESII.

inches; while several of the Dendrobes, a few of the Lælias, and one at least, of the Oncidiums, grow to a length of ten feet. The reed-like Sobralias, in their native land, are found thrice the height of a man. The duration of some orchid families is noteworthy, also. An experienced gardener may learn much of their age, by the size and appearance of the bulbs. An English military officer declares that he saw in Burmah, a gigantic specimen which bore trustworthy marks of being a hundred years old.

Thou hast not left
Thyself without a witness in these shades,
Of thy perfections. Grandeur, strength, and grace
Are here to speak of Thee.
That delicate forest flower
With scented breath, and look so like a smile,
Seems, as it issues from the shapeless mould,
An emanation of the indwelling Life,
A visible token of the upholding Love,
That are the soul of this wide universe.
My heart is awed within me when I think
Of the great miracle that still goes on,
In silence round me — the perpetual work
Of Thy creation, finished, yet renewed
Forever. Written on Thy works I read
The lesson of Thy own eternity.
Oh, there is not lost
One of earth's charms: Upon her bosom yet,
After the flight of untold centuries,
The freshness of her far beginning lies,
And yet shall lie.

BRYANT.

LÆLIA. — *Roman Lady's Name.*

THIS genus bears the name of the daughter of Caius Lælius (an ancient Roman nobleman), who was famed for intellectual acquirements, and for her beauty. The plant originates chiefly in Brazil; is of easy culture, and several of the varieties blossom in winter.

The Lælia is closely allied to the Cattleya, being of the same tribe — the second. Many varieties are known indiscriminately by either name, so close is their resemblance. Some very choice hybrids are produced by crossing the two species. Like the Cattleya, the Lælia thrives well on blocks of wood.

A French florist says that "the Lælia rivals, while it resembles, the Cattleya. The species are compact in growth, with evergreen foliage, producing their flowers (some of which are very large) on spikes from the top of bulbs. So far as gracefulness of leaf, brilliancy of coloring, form and size of flowers are considered, the orchids of this division are among the gems of the vegetable world."

Plate IX. Laelia Autumnalis.

LÆLIA AUTUMNALIS.

THIS variety — represented on Plate No. IX. — flowering probably in its native tropical home (Central America) in autumn, blossoms here in early winter. It is of luxuriant growth; produces from five to fifteen blossoms on a drooping spike. Those who study it will not doubt that the variety is every way worthy of cultivation.

In Eastern lands they talk in flowers,
And they tell in a garland their loves and cares;
Each blossom that blooms in their garden bowers,
On its leaves a mystic language bears.

"The fathers of the Church were in the habit of comparing the soul to a garden. Gardens figure conspicuously in the mythology of all nations living in a hot or temperate climate. The Mohammedan paradise is represented under that symbol. The Chinese speak of the gardens of the immortals, which are said to be situated among the mountains of Thibet, and blessed with perpetual summer; nothing within their bounds can die or grow old, and several ancient sages are believed to have retired to dwell among their bowers. There is a wild tradition among the Arabs concerning gardens of the desert, which are believed to have been formed by an ancient king, at enormous expense and labor. They say he conquered all the nations of the East, and boasted he would conquer the sands also, but, having completed his design, the gardens suddenly became invisible in the pomp of their richest bloom, and neither the monarch nor any of his successors ever again

beheld them; but bewildered travellers have caught glimpses of them at times, through the falling twilight, and given splendid accounts of their gorgeous trees and flowers."

"The Royal Garden at Stockholm contains one of the best collections of plants in Europe; and more pineapples are produced in the neighborhood of St. Petersburg (in spite of nine months of winter) than in any other capital in Christendom.

"God Almighty first planted a garden, and indeed it was the purest of human pleasures. It is the greatest refreshment to the spirits of man; and a man shall ever see that when ages grow to civility and elegancy, men come to build stately, sooner than to garden finely, as if gardening were the greater perfection. Yes, gardens are clearly significant of elegancy. He cannot be a bad man who loves either a garden or flowers." — LORD BACON.

Plate X. Laelia Dayeana.

LÆLIA DAYEANA.

THIS small plant — represented by Plate No. X. — received its name in compliment to Mr. John Day, whose magnificent collection of orchids is at Tottenham, England.

The variety is a native of Brazil; a new and distinct addition to the species. It blossoms in summer; is a small grower, but remains in bloom several weeks.

The Lælias, which belong to the second tribe, *Epidendreæ*, find themselves associated with many varieties, noteworthy for their fine perfume, and for this feature, also, that their sweet floral fragrance is diffused in evenings or during the night. Of such plants the poet speaks:—

> That keep
> Their odors to themselves all day,
> But when the sunlight dies away,
> Let the delicious secret out,
> To every breeze that roams about.

It is a curious fact in natural history, also, respecting that magnificent tree of Central and Southern Africa, the Baobab, whose trunk grows to be sixty feet in circumference, — that its very beautiful blossoms spread open their surfaces as soon as day fully dawns, and closes them again at night. Hence this vegetable wonder has been named by French Naturalists, "Beauties of the Day."

African natives, though sunk in ignorance, and apparently stupid, show themselves possessed of some fine imagination and poetic thought; for, assembled in small groups, and viewing this phenomenon of nature during the season of the Baobab's blos-

soming, — as soon as the flowers awake from sleep, — they salute them with the words, "Good day, Sweet Lady!"

"Poetry is full of the flower-fields; because each flower seems full of poetry to us. The flower-names are often little poems in themselves. Those long uncouth names, dreaded in Botany, hide nature-meanings in them. Heliotrope is 'she who turns to the sun;' Mesembryanthemum is 'flower of the mid-day;' Nasturtium carries its meaning of 'bent nose' in its face; Geranium is 'crane's bill,' — let the seed-vessel grow and it will tell the reason why; Saxifrage is 'rock-cleaver,' so named from its birthplace in the clefts; Anemone is 'wind-flower.' These, you see, were but simple heart and eye names to the Greeks or Romans, just as we call the pets heart's-ease, day's-eye, morning-glory, honeysuckle, mignonette. Each people has its own. Other flower-names come down to us impearled with myth and story, — the hyacinth, narcissus, Solomon's-seal, arethusa, the passion-flower. What sacred romances the lotus flower, the martyr's palm, the victor's laurel, recall! There is probably no famous poet who has not sealed his fame into a song about some favorite of the fields. Nay, every one plays poet with them, even those who write no verses. We use them to interpret all the tenderest things in life. When lovers would tell unutterable thoughts, they seek the floral messengers who have learned to say silently so much. When we want to send the home-presence tangibly in a letter, flowers from the window, or the field close by, will carry it best. The wounded in army hospitals, longing for familiar faces, tones, and touch, — greet flowers as the best substitute. 'Now, I 've got something for you that will talk of home,' said the nurse to a very sick New England soldier. 'Lilacs,' he whispered and smiled. But the lilacs outlived him." — Rev. W. C. Gannett.

Though it bloom afar from the minstrel's way,
And the paths where lovers tread,
Yet strength and hope, like an inborn day,
By its odors hath been shed.

Yes! dews more sweet than ever fell
O'er island of the blest,
Were shaken forth from its perfumed bell,
On a suffering human breast.

A wanderer came, as a stricken deer,
O'er the waste of burning sand,
He bore the wound of an Arab's spear,
He fled from a ruthless band.

And dreams of home, in a troubled tide
Swept o'er his darkening eye,
As he lay down by the fountain side,
In his mute despair to die.

But his glance was caught by the desert's flower,
The precious boon of heaven!
And sudden hope, like a vernal shower,
To his fainting heart was given.

For the bright flower spoke of One above;
Of the Presence, felt to brood,
With a spirit of pervading love,
O'er the wildest solitude.

Oh! the seed was thrown those wastes among,
In a blest and gracious hour!
For the lorn one rose, in heart made strong,
By the lonely, loneliest flower!

PHALÆNOPSIS. — *Butterfly Plant.*

This genus, which is of the third tribe, has its name from a fancied resemblance of the central part of the flower to a winged moth or butterfly. It has but few varieties, chiefly natives of the Indian Archipelago.

"Phalænopsids are of much interest," says Mr. Rand, "from the ease with which their flowers may be artificially fertilized, and from the curious phenomena attending the reception of the pollinia (seed-grains), by the stigmatic cavity. Before the pollinia are communicated, this cavity gapes widely; in the course of a few hours the sides draw together, and eventually the seed-grains or mass are held so tightly that they can only be removed by tearing, or with a knife."

Mr. Henderson adds further, respecting this Indian Butterfly Plant: "The flowers are borne from five to fifteen in number on a half-pendent spike. They are nearly circular in outline, and a fancied resemblance is traced between the blossom and a large white moth. In culture, the species require a high temperature while growing, with abundant moisture in the form of vapor, keeping floors and walls wet all the time. After summer growth, the temperature for these plants should be moderately reduced."

PHALÆNOPSIS STUARTIANA.

This variety, a native of the Philippine Islands, was named in honor of Mr. Stuart Low, senior partner of a florist firm in London. It is represented by Plate No. XI, and the drawing was made from a specimen in the greenhouse of F. L. Ames, Esq.

This is a new and choice variety, as yet quite rare, having been introduced into this country scarcely three years since. Of course but little is publicly known of it. It blossoms during the winter, and the plant seems too small even to support its long and graceful flower-spikes.

A recent English journal tells of one fine Phalænopsis of this variety that bore a three-branched spike, having twenty open blossoms; another which had twenty-one after some had been removed.

Look on these flowers! As on an altar shedding,
O'er Milton's page, soft light from colored urns;
They are the links, man's heart to nature wedding,
When to her breast the prodigal returns.

They are from lone, wild places, forest dingles,
Fresh banks of many a low-voiced hidden stream;
Where the sweet star of eve looks down and mingles
Faint lustre with the water-lily's gleam.

They are from where the soft winds play in gladness,
Covering the turf with flowery blossom showers —
Too richly dower'd, O friend! are we for sadness,
Look on an empire, — mind and nature, — ours!

PHALÆNOPSIS SCHILLERIANA.

This variety — represented by Plate No. XII. — received its name from Consul Schiller, of Hamburgh, a celebrated florist, and is a native of the Philippine Islands.

It is not possible to put upon a single sheet the whole of a thrifty specimen and its blossoms; and if this were done, it would be difficult to find language that would justly describe their varied beauties. Our drawing was made from a plant in Major Davis's greenhouse.

The roots, so far as seen, resemble a bunch of twisting earth-worms. Upon these rest broad, singularly mottled leaves; the stalk, often parting into several branches, and sometimes two feet long, bears a profusion of blossoms, unique in shape, and of mellow richness in colors. The plant is slow of growth, but, when well matured, has been known to bear more than a hundred flowers.

Some orchids continue to blossom for months after the first flowers are faded; but such blossoms are always smaller than the first, and this prolongation of the flowering season tends to exhaust the vitality of the plant; it should, therefore, be checked by giving the plant rest. The Phalænopsids are apt to over-flower and become exhausted.

Many plants have only two and three leaves, yet throw out a great profusion of fine blossoms. Some of the leaves are handsomely marked, and would render the species desirable even without a blossom.

PLATE XII
PHALENOPSIS
SCHILLERIANA.

Our readers will not fail to see that constant eulogium is offered to the flowers of the royal family of plants, — without taking much notice of the grace and elegant finish of their leaves. Before dismissing, therefore, our notice of the Phalænopsis, — which is notable for the elegance of its leaves, — we may read the quaint reasons for doing honor to the "*leafe*," rather than to the "*floure*," given in the poem which has been universally but wrongly attributed to Chaucer.

The poet, who imitates the *manner* of Chaucer, but not his melody nor his wit, represents that "a Gentlewoman out of an arbour in a grove seeth a great companie of Knights and Ladies in a daunce upon the greene grasse;" the which being ended, they all kneele downe and do honour to the daisie, — some to the flower and some to the leafe.*

In which were okës great, streight as a line,
Under the which the grasse so fresh of hew
Was newly sprong, and an eight foot or nine,
Every tree well fro his fellow grew
With branches brode, laden with levës new
That sprongen out ayen the sunnë-shene,
Some very red, and some a glad light grene.

"Now faire madame," quoth I, "yet I would pray
Your ladiship, if that it mightë be
That I might knowë by some maner way,
Sith that it hath likëd your beaute,
The trouth of these ladies for to tell me;
What that these knightës be in rich armour,
And what tho be in grene and weare the flour?

* *The Flower and the Leaf.*

And why that some did reverence to that tre,
And some unto the plot of flourës faire?"
"With right good will my faire doughter," quoth she,
"Sith your desire is good and debonaire."

And as for her that crownëd is in greene
It is Flora, of these floures goddesse,
And all that here on her awaiting beene,
It are such folke that loved idlenesse,
And not delite in no businesse
But for to hunt, and hauke, and pley in medes,
And many other suchlike idle dedes.

And for the great delite and pleasaunce
They have to the floure, and so reverently
They unto it do such obeisaunce
As ye may se."

The Instructor then gives answer why the knights have the ensign of honor rather by the leafe than by the floure.

"Soothly, doughter," quod she, "this is the truth;
For knightës ever should be persevering
To seeke honour without feintise or slouth;
Fro wele to better in all maner thing;
In signe of which, with leavës aye lasting,
They be rewarded after their degre,
Whose lusty greene May may not appairëd be,
But aié keping their beautie fresh and greene;
For there n' is stormë that may hem deface,
Haile nor snow, windë nor frostes kene;
Wherfor they have this property and grace;
And for the floure, within a little space
Woll be lost, so simple of nature
They be, that they no greevance may endure.

And every storme will blow them soone awaye;
Né they laste not but for a sesone;—
That is the cause, the very trouth to saye,
That they may not, by no way of resone
Be put to no such occupation.
Madame (quoth I), with al mine whole servise
I thanke you now, in my most humble wise,

For now I am ascertained throughly
Of everything that I desired to knowe;
. . . . .
Unto the Leafe I owe mine whole observaunce.
That is, quod she, right well done certainly,
And I pray God to honour you avaunce."

ONCIDIUM. — *Tuberculous appearance.*

This is an extensive genus, belonging to the third tribe. It receives its name from knobby protuberances in the blossoms, resembling tubercles. The family is chiefly from tropical America. According to Monsieur Figuier, a French florist, "the prevailing color of their flowers is yellow, spotted with rich reddish brown, and they are known by their broad labellum or lip, continuous with the column, and furnished at the base with a tuberculated (knobby) disc. In their native forests these epiphytes wholly overrun some trees, clasping them round, and covering them from top to bottom with brilliant and grotesque flowers."

One variety of Oncidium is spoken of as having golden panicles nine or ten feet long. They all belong to the class of cool orchids, are evergreens, very showy, of easy culture, and give abundance of gay blossoms.

ONCIDIUM BARKERII.

THIS plant — represented by Plate No. XIII. — received its name in compliment to Mr. George Barker, a late eminent florist of Birmingham, England. The specimen from which our drawing was made was very luxuriant in growth, the flower-stalk being over four feet long. It was from Mr. Ames's garden at North Easton.

The plant much resembles, in foliage and bulbs, the *Odontoglossum*, the flower a rich brown, barred with yellow. This variety is a native of Mexico, and blooms in late winter.

Our eminent American florist, Henderson, gives the subjoined curious and very interesting sketch of the Oncidium genus:—

"This is perhaps the most extensive and varied genus in the order or tribe to which it belongs. Some of its species have extremely large pseudo-bulbs; others have pseudo-bulbs very small. Another portion are entirely destitute of these, and have, instead, thick leathery leaves, which again vary in size from two feet long and nearly half as much in breadth, to scarcely six inches in their greatest measurement. A third group are distinguished by their rounded, rush-like leaves, about the thickness of one's little finger, and from two to four feet long. Besides this, quite as much disparity exists in the size and color of the flowers, and in the length of the flower-spike, which in some species attain to twenty feet; while in others to not more than three or four inches. Yet each individual plant is beautiful, and worthy a place wherever orchids are grown.

"They are all natives of South America, Mexico, and the West Indies; and as they thrive in a much lower temperature than

the Dendrobe and many other varieties, they are very suitable for the ordinary greenhouse. It is better to cultivate the larger growing kinds in pots; the smaller on blocks of wood, cork, or in baskets. They need abundant drainage, moist temperature, shade from strong light, cleanliness, and a moderate rate or time for sleep in winter. These conditions will secure healthy flowering plants."

As one stands at the entrance of the long, cool orchid-house of Mr. Ames, and looks down the vista of successive banks of flowers, it can be easily imagined that the poet Wordsworth had enjoyed a similarly beautiful sight just before composing the following lines: —

There is a fresh and lovely sight;
A beauteous heap and hill of moss.
All lovely colors there you see,
And mossy net-work, too, is there,
As if by hand of lady fair
The work had woven been.
And cups, the darlings of the eye
So deep in their vermilion dye.
Ah, me! what lovely tints are there,
Of olive, green, and scarlet bright!
In spikes and branches, and in stars,
Green, red, and pearly white.

CALANTHE. — *Beautiful Flower.*

THIS genus is a terrestrial, belonging to the third general tribe, and a native of the East Indies. The name comes from two Greek words, καλὸς — beautiful or elegant — and ἄνθος — a flower. It does not number many varieties when compared with the Odontoglossums, but all of them are commended to us as rich in color and form.

This genus of stemless terrestrials has broad, many-ribbed leaves, and long spikes of flowers of various colors, most commonly white and pink. Most of the species are evergreen, though the variety represented in these pages is not. They require a very light house for their best development of blossoms, and to give them good color. They are propagated by division of the roots.

CALANTHE VEITCHII.

This variety — represented on Plate No. XIV. — received its added name in compliment to a distinguished family of English florists — Messrs. Veitch. It is a hybrid; a cross between the *Limatodes Rosea* and *Calanthe vestita*, and was first grown by Mr. Dominy, gardener of James Veitch. Its fine flowers of different shades grow on stalks often three feet long, continuing in bloom for months. The variety is of easy cultivation, deciduous; and as no leaves remain to hide the unsightly bulbs when its blossoms are fully opened, florists often conceal them with ferns.

For winter house decorations this variety is very desirable; their only defect is want of foliage. Orchid collections can hardly possess too many of them, for they come to cheer us, and are a constant pleasure through the winter months.

We do not claim for this beautiful bulbous plant such antiquity as is mentioned by the poet Tupper — ("On a Bulbous Root"). But in appearance, this (as well as many others) seemed quite as dead as the wonderful bulb of which he speaks:—

> What, wide awake, sweet stranger, wide awake?
> And laughing coyly at an English sun,
> And blessing him with smiles for having thawed
> Thine icy chain, for having woke thee gently
> From thy long slumber of three thousand years?
> Methinks I see the eye of wonder peering
> From thy tall pistil, looking strangely forth
> As from a watch-tower at thy fellow flowers,
> Admiring much the rich variety
> Of many a gem in nature's jewel-case —
> Unknown to thee, — . . .

Plate XIV. Calanthe Veitchii.

Methinks thy wondering leaves
And curious petals at the long-lost sun
Gaze with a lingering love, bedizen'd o'er
With a small firmament of eyes to catch
The luxury of his smile; . . .
Methinks I see thy fair and foreign face
Blush with the ardor of first love,
When some bright butterfly descends to sip
The exotic fragrance of thy nectarous dew;
Even so, Zabal's daughters in old time
Welcomed the sons of God, who sprang from heaven
To gaze with rapture on earth's fairest creatures,
And fan them with their rainbow-colored wings.

Didst ever dream of such a day as this;
A day of life and sunshine, when entranced
In the cold tomb of yonder shrivelled hand?
Didst ever try to shoot thy fibres forth
Through thy close prison-bars, those parchment fingers,
And strive to blossom in a charnel house?
Didst ever struggle to be free, — to leap
From that forced wedlock with a clammy corpse, —
To burst thy bonds asunder, and spring up,
A thing of light, to commerce with the skies?
Or didst thou rather, with endurance strong,
Baffle corruption, and live on unharmed
Amid the pestilent steams that wrapped thee round,
Like Mithridates, when he would not die,
But conquered poison by his strong resolve?

O Life, thy name is mystery, — that couldst
Thus energize inert, be, yet not be,
Concentrating thy powers in one small point;
Couldst mail a germ, in seeming weakness strong,
And arm it as thy champion against Death;
Couldst give a weed, dug from the common field,

What Egypt hath not, — Immortality.
It may be, suns and stars that walked the heavens,
While thou wert in thy slumber, gentle flower,
Have sprung from chaos, blazed their age, and burst,
It may be, that thou see'st the world worn out,
And look'st on meadows of a paler green,
Flowers of a duskier hue, and all creation,
Down to degenerate man, more and more dead,
Than in those golden hours, nearest to Eden,
When Mother Earth, and thou, and all were young.
But this dry hand, —
Wert thou some garden-lover, and this bulb
Perchance most rare and fine, prized above gold
(As in the mad world's dotage, yesterday
A tulip-root could fetch a prince's ransom),
Was to be buried with thee, as thy praise,
Thy Rosicrucian lamp, thine idol weed?
Perchance, O kinder thought and better hope,
Some priest of Isis shrined this root with thee
As nature's hieroglyphic, her half guess
Of glimmering faith, that soul will never die.
What emblem liker, or more eloquent
Of immortality,
Or all whatever else were symbols apt
In Egypt's alphabet, — as thou, dry root,
So full of living promise?

ÆRIDES.—*Air Plant.*

In this genus, epiphytes from the East Indies, of the third tribe, are combined with rich evergreen foliage and opposite leaves, gracefully curving flower-stalks, and blossoms of fine fragrance, of singular rather than beautiful form, proceeding from the axils of the leaves. They are natives of the hottest parts of India and other tropical regions, attaching themselves to trees, generally such as overhang running streams of water.

These plants possess a remarkable tenacity of life, imbibing their whole nutriment from the atmosphere, without aid or intervention of any soil or other substance. One writer tells us that if the flower-stalks are removed from the main plant before the blossoms are fully developed, and suspended by strings from the ceiling of a room, they will live for weeks, and even months, supported by the moisture floating in the atmosphere, and continue blossoming luxuriantly. Hence they are among the favorite ornaments of dwellings in China and Japan.

ÆRIDES QUINQUEVULNERUM.

THE whole name of this most singular, grotesque, one-sided variety — represented by Plate No. XV. — put into intelligible English, would be *Air Plant of five wounds*, and the name accurately describes the number of petals with their apparently bloody marks. It is a native of the Philippine Islands, and blossoms in September.

This variety may be characterized as an evergreen of luxuriant growth, having small, unusually shaped blossoms, — white, spotted with purple, and rope-like roots, often three feet and more in length.

High floral authority gives the subjoined description of the characteristics of the whole family of the Ærides, which we confess seems to us somewhat exaggerated: "These plants are all peculiarly beautiful, uniting rich evergreen foliage, graceful habit, and elegant flowers of exquisite fragrance. The stem of the plant is straight, or slightly bent, with leaves attached on opposite sides; the plants have large, fleshy roots, shooting horizontally from the lower part of the stem. The racemes of flowers are from one to three feet in length, often branched. They are of easy growth; must have a good supply of heat and moisture in the growing season; are propagated by cutting them in pieces, having root attached to each piece. No collection of orchids can be complete without some of these charming plants."

So forth issew'd the Seasons of the yeare:
First, lusty Spring all dight in leaves of flowres,
That freshly budded and new bloosomes did beare,
In which a thousand birds had built their bowres
That sweetly sung to call forth paramours;

And in his hand a iavelin he did beare,
And on his head, as fit for warlike stoures,*
A guilt, engraven morion he did weare;
That, as some did him love, so others did him feare.

Then came the iolly Sommer, being dight
In a thin silken cassock coloured greene,
That was unlyned all, to be more light:
And on his head a girlond well beseene
He wore, from which, as he had chauffed been,
The sweat did drop; and in his hand he bore
A boawe and shaftes, as he in forrest greene
Had hunted late the libbard † or the bore,
And now would bathe his limbes, with labor heated sore.

Then came the Autumne, all in yellow clad,
As though he ioyëd in his plentious store,
Laden with fruits that made him laugh, full glad
That he had banisht hunger, which to-fore
Had by the belly oft him pinchëd sore:
Upon his head a wreath, that was enrold
With eares of corne of every sort, he bore;
And in his hand a sickle he did holde,
To reape the ripened fruits the which the earth had yold. ‡

Lastly came Winter, cloathëd all in frize,
Chattering his teeth for cold that did him chill;
Whil'st on his hoary beard his breath did freese,
And the dull drops, that from his purpled bill
As from a limbeck § did adown distill:
In his right hand a tippëd staffe he held,
With which his feeble steps he stayëd still;
For he was faint with cold, and weak with eld; ‖
That scarse his loosëd limbes he hable was to weld. ¶

SPENSER.

* Strifes. † Leopard. ‡ Yielded. § Alembic. ‖ Age. ¶ Wield.

ODONTOGLOSSUM. — *Tooth and Tongue.*

We come now to the third and most numerous of orchid tribes. *Odontoglossum* is from the Greek ὀδούς, a tooth, and γλῶσσα, a tongue, with the usual Latin termination; so named from a fancied resemblance, in the blossom's centre, to a tooth, and the likeness of the lip underneath to the tongue. This species is nearly related to, and much resembles, the Oncidium. It is of the class epiphytes; and was first collected by Humboldt and Bonpland, during their travels in South America.

This genus is classed among the cool orchids, and is found chiefly in the mountain ranges. Our best American author, Mr. Rand, says that "in 1833 there were only five known species of the Odontoglossum, but every year has brought additions, and each new comer seems to be more attractive than any before known." One firm in England, Messrs. Shuttleworth & Co., of Clapham, not long since, had in their greenhouses ten thousand of these plants.

A recent English journal instructs us that, "as with most other variable orchids, the extraordinary variability of this species may be accounted for largely by the different latitudes over which it is distributed. In this respect, its stability is still further encroached upon by the great variations exhibited in the flowers of plants from each locality. Thus it is that different names, well understood when the plant was rare, have now but little meaning."

M. Roezl employed native children to collect specimens for him on the western slope of the central Cordillera, in San Domingo; he derived much pleasure from his business relations with them, and the young natives seemed to find great pleasure as well as profit in their new occupation.

ODONTOGLOSSUM ROEZLII ALBUM.

THIS variety — represented on Plate No. XVI. — is named for M. Roezl, a Belgian, whose labors have discovered and given to florists many rare orchids. Its mingled Greek and Latin title may be put into botanic English, as Roezl's *White Tooth-tongued* plant. It is a native of New Granada; it blossoms in winter, and is especially desirable as being delightfully fragrant.

The specimen here drawn was found in the greenhouse of Major Davis, of Syracuse, N. Y.

Sweet nurslings of the vernal skies,
Bathed in soft airs and fed with dew,
What more than magic in you lies
To fill the heart's fond view?

Relics ye are of Eden's bowers,
As pure, as fragrant, and as fair,
As when ye crowned the sunshine hours
Of happy wanderers there.

Fall'n all beside — the world of life,
How it is stained with fear and strife!
In reason's world what storms are rife,
What passions range and glare!

But cheerful and unchanged the while
Your first and perfect form ye show,
The same that won Eve's matron smile
In the world's opening glow.

The stars of heaven a course are taught,
Too high above our human thought;
Ye may be found if ye are sought,
And as we gaze, we know.

KEBLE.

Many in this country have supposed that these tropical plants could not be successfully cultivated here, for the want of sufficient heat. This is a mistake, especially with respect to the classes denominated "cool orchids." A maximum temperature during hot summer days is more harmful than one very much lower. Many Odontoglossums, Masdevallias, and Oncidiums suffer as much from summer heat as would the Phalenopsis from too cold a temperature. Gardeners often say that an orchid is very *touchy;* that it will do well in only one particular place. No doubt the heat is too great in some places, and for some particular plants, and the temperature too low for others.

"The Odontoglossums," says Mr. Rand, "are not of easy culture; they perish if kept hot. The heat of our summers is a great obstacle to the successful cultivation of the cool species, how to overcome which is hardly yet known. Perhaps the best way to attempt their culture would be in houses facing the north, from which, during the hottest weather, lights could be removed and replaced by canvas on rollers. They all need free air, clean potting and are hurt by sour soil."

There is, in truth, need of several houses with different degrees of temperature, so that each species shall enjoy a climate as nearly as possible like that of its native land. The Odontoglossums are all evergeens, and must not be allowed to dry up, but be carefully watered. "To obtain success in the culture of this beautiful genus of plants is worth any labor, which will be well repaid by the stately grandeur of some of the species, the delicate beauty and charming fragrance of others."

> Indulged in what they wish, they soon supply
> Large foliage, overshadowing golden flowers,
> Blown on the summit of the apparent fruit.

Plate XVII

ODONTOGLOSSUM TRIUMPHANS.

THE drawing of this variety — shown in Plate No. XVII. — was made from a luxuriant specimen in the orchid house of Mr. Ames. The name *triumphant*, or *excelling all others*, justly marks it as one of the finest in a large and choice species. Art can hardly expect here to equal the brilliancy of nature.

Only a part of the specimen, on account of its size, could be represented on these pages. The variety is a native of New Granada. Its flowers are very large, blossoming late in winter; they are quite fragrant, though not pleasantly so to all persons.

Bright and glorious is that revelation
  Written all over this great world of ours,
Making evident our own creation
  In these stars of earth, — these golden flowers.

In all places, then, and in all seasons,
  Flowers expand their soul-like wings;
Teaching as by most persuasive reasons
  How akin they are to human things.

Following the exquisite lines of Longfellow, which appropriately touch the appearance of "these golden flowers" of the Odontoglossum, we now turn to the soberness of scientific thought: "In the distinction of sex, plant life lays hold of us. It comes between the mineral and animal kingdoms as the connecting link. For plants not only exercise the primitive digestion, — feeding on minerals, which they organize into the food on which we higher creatures live; they not only hint, while they prepare, our respiration, — draining clear the air of that which poisons us, and restocking it with that which we must breathe; but in this distinction of

sex in their flowers, they rise to the height of their stature, and foreshadow the third great function of animal life,—that of reproduction. Of the whole plant, the flower is the part nearest akin to us. Like us, it breathes oxygen, and gives out carbonic acid. Like us, it therefore gives out heat; for the flower is the warmest part of the plant. Like us, it has rest,—seasons of sleep, so called; and for reproduction needs to hoard, and in the process exhausts vitality. Like animals, too, plants have ancestry, and cousinship, and can only be arranged in a true system when we arrange them physiologically."

Following in the same line of instruction as above, from a different author — and with but little repetition — we copy this: —

"The indoor culture of plants is intimately connected with the sanitary condition of our dwellings. The oxygen of the atmosphere is indispensable to respiration of animals. It purifies the blood, affords them internal heat, and united with certain elements, is expired in the form of carbonic acid gas,—a compound of oxygen and carbon. This gas which is deleterious to animal life, constitutes the main nourishment of plants, which absorb it, appropriate its carbon, and restore its oxygen to the atmosphere, again to be breathed in purity by men and animals. It is true that pure air is necessary alike to the life of plants and animals; but the amount of oxygen absorbed by the former is by no means equal to that which they restore, and thus through their agency the atmosphere is kept in healthy equilibrium.

"It is only during the day, and under the influence of light, however, that carbonic acid is employed for the nutrition of plants. That which they absorb in the night is returned to the atmosphere with the water which is constantly evaporating from the surface of

leaves. From this explanation it will be understood how the night air of an apartment containing flowers is said to be less healthy than the atmosphere pervading it during the day; though under ordinary conditions of ventilation no danger need be apprehended from this source.

"Besides their directly purifying influence, plants also tend indirectly to the health of dwelling-houses. For their sakes, windows that contain them will be oftener cleaned; the sash will be more frequently thrown open, and the air and sunshine intended for them will also lighten and purify the interior of the apartment."

Think me not unkind and rude
That I walk alone in grove and glen;
I go to the god of the wood
To fetch his word to men.

Tax not my sloth that I
Fold my arms beside the brook;
Each cloud that floated in the sky
Writes a letter in my book.

Chide me not, laborious band,
For the idle flowers I brought;
Every Aster in my hand,
Goes home loaded with a thought.

There was never mystery
But 't is figured in the flowers;
Was never secret history
But birds tell it in the bowers.

One harvest from thy field
Homeward brought the oxen strong,
A second crop thy acres yield,
Which I gather in a song.

EMERSON.

ODONTOGLOSSUM ALEXANDRÆ.

This variety — represented in Plate No. XVIII. — of cluster-ing floral richness, is understood to have been first noticed growing upon the branches of trees in New Granada. It received its name in honor of the Danish Princess Alexandra, now the everywhere beloved Princess of Wales.

This variety grows many thousand feet above the sea level, and blooms freely from late autumn into winter. Mr. Rand says this is "a very beautiful species, sporting in many varieties. The type seems to be pure white, with bright golden spots on the lip, but the markings vary to red, rose, purplish brown, and many shadings, — varying also greatly in the size of the spots and mark-ings. The flower-spike is about twelve inches high, gracefully arching, and bearing from six to twelve large flowers, often three inches or more in diameter; but in fine varieties the spike is often much longer, and bears many more blossoms. It blooms freely, but requires to be kept very cool."

We have elsewhere given an extract describing some of the difficulties — and dangers, even — of explorations in tropical re-gions for orchids. The notes following, from a late London journal, give further insight into this business. A traveller says: —

"One would find Bogota full of orchid-hunters, and nearly every tap-room in the place crowded with them, and with Indians bringing down Odontoglossums for sale. And here it might be ob-served that the honesty and civility of the people, who are nearly all Indians, with a little Spanish blood in them, is remarkable. To those accustomed to the morality of highly civilized lands, the sim-

ple-hearted honesty of these poor Indians is something well-nigh incredible.

"At a place called Monkey Hill, where the cemetery of Colon is situated, the trees were covered with parasites. There were Epidendreæ in any quantity, but the hollow pseudo-bulbs were so full of an obnoxious little black ant, as to render handling them disagreeable work." . . .

"The scenery up the Magdalena River is very fine, but rather monotonous, as the banks are always low. The shades of green in the foliage are very various, relieved now and again by masses of scarlet and yellow flowers. The jungle is very dense, and can only be traversed by a frequent use of the machete, or hatchet-knife, that Indians always carry. Monkeys are not very plentiful through the woods. Caymans, or alligators, swarm on every mud-bank all the way up the Magdalena."

Nature! to me than art more beautiful
In thy most simple forms, than all that man
Hath made with all his genius and his power
Of combination; for he cannot raise
One structure, pinnacled, or domed, or gemmed,
By architectural rule, or cunning hand,
Like to the smallest plant, or leaf, or flower,
Which, living, hath a tongue that doth discourse
Most eloquent of Him, the great Creator
Of all living things. Man's makings fail
To tell of aught but this, that he, the framer,
Sought also to create and failed, because
No life can he impart, or breath infuse
To give inertness being.

LYCASTE.—*A Lady's Name.*

This small family, belonging to the third tribe of orchids, originating in Central and South America, bears the name, it is supposed, of a celebrated Sicilian beauty. They are epiphytes of the pseudo-bulbous class. Being natives of the Western hemisphere, the species do not need a very high temperature; neither do they require so decided a rest as some other varieties of the order. They must be freely supplied, when growing, with air and water.

LYCASTE AROMATICA.

The member of the third tribe of orchids — represented by Plate No. XIX. — is worthy of cultivation for its manifold greenish-yellow blossoms, unique in shape, and for its spicy odor which the name suggests.

It blossoms in early autumn. This specimen was from Major Davis's greenhouse.

Some gardeners imagine that the Lycaste Aromatica is of the same tribe as the Vanilla Aromatica, that remarkable climbing orchid which furnishes the rich vanilla of commerce. And although this relationship is quite doubtful — the article now in hand furnishes not unfit occasion to speak of its partial namesake.

One of our best American florists describes the Vanilla as "a small genus of tropical climbing orchids, the most valuable of the whole family; not on account of its flowers, but for the commercial importance of its fruit, which is so widely and largely used in flavoring extracts. The best vanilla is from Mexico, but several other South American varieties are valued. The flowers of this (Mexican) species are white, striped with red, and quite insignificant. These flowers are succeeded by pods, generally growing to six inches long, and one fourth of an inch in diameter. The pods contain, besides numerous seeds, a substance which is black, oily, and balsamic. When recently gathered, this dark mass is moist, and its odor is said to produce intoxication.

"The pods are to be gathered during the last three months of the year, carefully dried by exposure to the sun, and, while warm,

wrapped in woollen cloths (to promote and absorb evaporation). When thoroughly cured they are ready for shipment.

"The extract is obtained by cutting the pods in small pieces, and pulverizing them in a mortar containing about four parts of fine glass to one part of vanilla. It requires a great amount of labor to pulverize the pods sufficiently, so that diluted alcohol will extract and secure the whole flavoring substance. When the pulverized mass has been several days in alcohol, it is filtered through paper, and then is fit for use."

In addition to the above, a recent English journal gives, with very few words of repetition, this very interesting detail of the character and treatment of the vanilla plant: —

"This climbing orchid is met with in its wild state at Sante Comapan. It is occasionally met with on the cocoanut trees, but it rarely fruits. It must raise itself beyond the shade which prevents access of air and light. That is to say, its flexible stems must climb to the top of a tree, from whence they fall in graceful garlands, swaying to and fro — provided that the Indian does not come, pruning-knife in hand (stimulated by hope of gain) — to clear away the dense foliage of the forest.

"The Vanilla also thrives on dry and bare rocks — which it covers in the fashion of our ivy — in which position it always bears numerous excellent fruits, whose presence is revealed, about the time they attain maturity, by the perfume which they give off.

"The fruit is a pod from five to eight inches long, and it must be gathered before quite ripe, otherwise the valves separate, and their contents become soaked by rains and spoiled. The sawdust-like seeds, now to be considered as the seat of the vanilline, are scattered, and the aromatic perfume of the plant disappears.

"Mexican Vanilla is highly esteemed, and is cultivated in certain villages of the State of Vera Cruz. In the interest of the toiling and rarely thrifty Indian, it is to be wished that vanilline should no longer be extracted from fir-tree sawdust,—otherwise the true vanilla must lose its character and value."

The bud is in the bough, and the leaf is in the bud,
And earth 's beginning now in her veins to feel the blood
Which, warmed by summer suns, in their alembic of the vine,
From her founts will overrun in a ruddy gush of wine.

The perfume and the bloom that shall decorate the flower,
Are quickening in the gloom of their subterranean bower,
And the juices meant to feed trees, vegetables, fruits,
Unerringly proceed to their preappointed roots.

Thou hast fanned the sleeping earth till her dreams are all of flowers,
And the waters look in mirth for their overhanging bowers;
The forest seems to listen for the rustle of its leaves,
And the very skies to glisten in the hope of summer eves.

HORACE SMITH.

VANDA. — *Sacred Misletoe.*

This plant is an East Indian species, having very many varieties, all exceptionally fine. It belongs to the third tribe. The name seems to have come to us through the Sanskrit; *Vanda* meaning the parasite or misletoe growing out of an oak. For this evergreen parasite, growing upon and out of other trees, rarely appeared upon an oak; and when this occurred, a peculiar sacredness was supposed to attach to it. *Vandaca*, among these Orientals, was *an oak.* With the addition, *Amaravanda*, we have the meaning *Tree Orchid.*

Perhaps this following statement is too strong, but one English writer says, "there is no hesitation about what plant is to occupy the premier position — the post of honor, in this grand family. By universal consent it would be accorded to the Vanda."

PLATE XX. VANDA SUAVIS.

VANDA SUAVIS.

THIS variety, — represented by Plate No. XX., — is described as *Suavis*, that is, *sweet-scented*. It is a native of Java, blossoming late in the winter, and sometimes at other seasons. The specimen from which this drawing was made could be but partially reproduced, it was so large. This variety much resembles the Ærides; is of free growth and easy culture; has dark evergreen foliage, with long rope-like roots. The blossom is very fragrant and of rare beauty.

An English florist speaks of one specimen of the Suavis as having a spike with fifteen flowers; and five spikes bearing sixty-five blossoms, — an unusual number. This plant was four and a half feet high, and had forty leaves running down to the pot.

God might have bade the earth bring forth
  Enough for great and small,
The oak-tree and the cedar-tree,
  Without a flower at all.
We might have had enough, enough,
  For every want of ours,
For luxury, medicine, and toil,
  And yet have had no flowers.

Then wherefore, wherefore, were they made,
  All dyed with rainbow light?
All fashioned with supremest grace,
  Upspringing day and night?
Springing in valleys, green and low,
  And on the mountains high,
And in the silent wilderness
  Where no man passes by?

Our outward life requires them not,—
  Then wherefore had they birth?
To minister delight to man,
  To beautify the earth;
To comfort man,—to whisper hope,
  Whene'er his faith is dim,
For who so careth for the flowers
  Will care much more for him!

MARY HOWITT.

One of our leading American florists gives the following instruction respecting the whole family of the Vanda:—This is a genus of exquisitely beautiful epiphytal orchids, from tropical Asia. Several of the species were found in our best orchid houses some years since, where they are most conspicuous objects, both on account of the size and beautiful colors and marking of the flowers, as well as for their delicious fragrance.

From March till May, the heat for their rooms should range from 70° to 90° Fahrenheit, and even more in sunny weather; and every morning and evening they should be surrounded with vapor, besides having an application of water with a garden syringe once a day. From May till September, which in New Jersey is the blooming season,—the same degree of heat, but with a diminution of moisture as the flowers advance. Afterward, through the winter, moisture may be withheld, and the temperature reduced to 60°.

CYMBIDIUM. — *Boat-Shaped.*

This genus belongs to the third tribe. Its title is a Greek word, κύμβος, that is, boat-shaped; because the centre of its flower resembles a canoe or boat. It is a native of the East Indies, and numbers both the epiphytal and terrestrial class. Some florists say that they are all successfully cultivated if treated as of the terrestrial class; that is, planted in a rich soil and kept very moist.

Many of the varieties are of rare beauty, and all are worthy of cultivation. Some are remarkable for their delicious fragrance. They are generally of large habit and of stately foliage.

CYMBIDIUM HOOKERIANUM.

This variety,—represented by Plate No. XXI.,—is a native of the Himalaya Mountains, and was named in compliment to Dr. J. D. Hooker, a director in the Kew Gardens. This very curious specimen, attractive from its prominent and parti-colored bulbs, was impossible of complete representation on these pages, from the large number of its bulbous and leafy portions, forming a mass two and a half feet in diameter, while the flower-stalk was two feet long.

The specimen from which our drawing was made was evidently a plant of many years' growth,—which fact is known from the size and number of bulbs. It was in the orchid house of Mr. Ames, of North Easton, Mass.

Few persons are aware of the magnificence of the Kew Gardens in England; the Botanic Gardens of Edinburgh; the College Gardens of Dublin; or similar establishments in Glasgow, Manchester, and other cities, especially of Western Europe. Thousands of deeply interested people are attracted to these floral centres, from nearly all parts of the world. We are told that large cargoes of plants, chiefly orchids, and very costly, are brought nearly every week to the great emporium upon the Thames,—from South America, from Southern Africa, and Asia; from Queensland and the Islands near the equator,—to be distributed throughout the United Kingdom, and by agents in this country.

Our own country is far behind England in the cultivation of

Plate XXI. Cymbidium Hookerianum.

orchids; but the noble collections near Boston, in Albany, and — we doubt not — near New York city and Philadelphia also, already present treasures worthy of study, and give a promise of nobler things to come.

It has been elsewhere observed in these pages, that very few of the great orchid family are as yet found useful in the various economies of life. But there is one notable exception, in the article of commerce known as *Salep*, a nutritious food prepared from several of the orchid plants. The subjoined somewhat variant accounts of the matter will interest the general reader. Appleton's Encyclopædia says:—

"Salep (Persian *Sahaleb*) is a substance consisting of the dried bulbs of various species of the orchidaceæ. Any of the tuberous-rooted orchids afford it, and it is ascribed to more than a dozen species, natives of different countries, from England to India. It is known in commerce by the country rather than by the plant producing it; but is chiefly supplied through Smyrna. Some species have roundish, others lobed tubers, which when taken up, are stripped of their epidermis and plunged into boiling water, or dried in an oven, after which they are strung together in bunches. In drying they form small, oval, irregular masses, — hard, horny, semi-transparent, of a yellowish color, feeble odor, and mild, mucilaginous taste. It is used in a powdered state, in which it is also sometimes kept.

"Salep has long been in use in Oriental countries, where it has been for ages regarded as able to restore virility — but at best, it is only an article of diet of no special value. It contains a small proportion of starch, and forty-eight per

cent of a peculiar mucilage, more nearly allied to celluloid than to gum. It will convert forty parts of water into a thick jelly. Small amounts of sugar and albumen are also present. Salep is hardly known to Americans. Druggists keep it to supply the wants of Europeans, who use it in a decoction flavored with spice, wine, and sugar."

Chambers's Encyclopædia teaches as follows:—

"Salep, the tubers of many species of Orchidaceæ, dried, are used as an article of food. Of the two tubers usually found at the roots of these plants, only one is gathered for salep,—the younger and more solid of the two. The tubers are gathered when the stalk is about to fall. They vary from the size of a cherry-stone to that of an olive. They are cleaned, dipped for a few minutes in boiling water, and dried as quickly as possible, by which process they are rendered hard and horny. The greater part of the salep of commerce is brought from the East, and much of it from Persia. It is supposed to be obtained from species of *Eulophia*; but most of the European species of orchids are used for it.

"Before coffee became so common in Britain, salep was an article of considerable importance, and large quantities were imported from Turkey, Persia, and India. In France it is still in considerable request. For use it is ground into a fine powder, and mixed with boiling water, sugar and milk being added according to taste. As a diet-drink it was considered very nutritious and wholesome, and, thirty years ago, it was sold, ready prepared, to the working classes of London, early in the morning, from numerous street stalls. Its principal constituents are *bassorine*, starch, and phosphate of lime."

CYPRIPEDIUM. — *Venus' Slipper.*

We are introduced by this name to the seventh and last tribe of orchids. Although its varieties are constantly increasing, its single family consists as yet of but a few score, while each of the other six tribes number their varieties by hundreds.

This whole genus may be reckoned cosmopolitan, and it is remarkable that a family with such marked and distinctive characteristics should find congenial homes in such diversified conditions of soil and climate. Species are quite generally distributed over most Northern States, and into Canada; through Mexico, South America, the islands of the Pacific, and India. The State of New York furnishes six varieties, all worthy of cultivation.

The oldest known orchid was the Cypripedium Calceolus, a terrestrial and dwarf evergreen; for epiphytal orchids were wholly unknown till the discoveries of Messrs. Rumphius and Koempfer, at the commencement of the eighteenth century. It was a hundred years later that they were brought to England and cultivated with any success.

The word *Cypripedium* is from the Greek *Κύπρος*, or *Cyprus*, — one of the names given to the goddess Venus, because the island of Cyprus was an early and chief worshipper of this deity, — and from *πόδιον*, a *sock* or *little shoe*. Thus we get the botanic name *Venus' Slipper*.

It is a fact of interest, in this connection, that, in the ages long ago, beautiful flowers, as well as many other things, were

dedicated to, and superstitiously associated with, gods and goddesses of the nations. Upon the banishment of heathen mythology by the spread of Papal civilization, these dedicated or worshipped things were transferred to the Virgin Mary, or to some canonized saint. Hence the beautiful plant we are now considering received the name *Calceolus Mariannus*, — Mary's Slipper, — in the popular language of those times, "Slipper of our Lady;" in the common phrase of to-day, *Lady's Slipper.*

Plate XXII. Cypripedium Niveum

CYPRIPEDIUM NIVEUM.

Venus' Slipper, *Snowy White*, is the name (when translated into our vernacular) given this variety, which is represented in Plate No. XXII. It presents us with a plant of unusual and curious structure, — we are tempted to say of unapproachable beauty, — having blossoms of pure white, dotted minutely in violet. Its origin is in the Malayan Peninsula. It blooms in November and in later months, and is as yet a somewhat rare variety.

A look at this exquisite floral gem well suggests the devout sentiment of Mrs. Sigourney:—

"Who hung thy beauty on such slender stalk,
Thou glorious Flower."

Though orchid collections are growing by immediate and natural increase, florists of many countries, especially of England, are sending abroad trained collectors, and sparing no expense, in searching through Brazil, Mexico, the highlands of New Granada, Ceylon, and even Australia, in the hope of discovering some new and hitherto unknown orchid plants of value. Nor are florists content with this, but are now turning attention to processes of hybridizing, — among the most prominent and successful of whom are to be named Messrs. Seden, Dominy, and Mitchell of England, and Monsieur Bleu of France.

Thus far, florists have not succeeded in raising orchids from

the seed. Reproduction by germination of plants with their own pollen (or breeding in and in, as this is called) is not apt to give desirable stock; and of all the different tribes and species, none so readily accept the process of hybridizing and cross-fertilization, as the Cypripedium.

It is a singularity of the great orchid family, that few of all the species are capable, by themselves, of perpetuation, but most varieties are wholly dependent for the germination of seed, and their future growth, upon insect agency. These little ministers of reproduction — generally bees and the butterfly, — are attracted by the perfume, or by their hunger, to the bosom of flowers where pollen is stored. While feeding or visiting in the blossom, a portion of the pollen adheres to the insect, and is by it soon carried to a needed spot, — some pistillate plant. The ovaries expectantly open, receive the pollen, close at once, and hold the seed deposit till it becomes a floral birth.

The poet Cowper gives scientific truth, in the following lines, respecting orchid reproduction: —

> "These have their sexes, and, when summer shines,
> The bee transports the fertilizing meal
> From flower to flower, and e'en the breathing air
> Wafts the rich prize to its appropriate use."

Charles Darwin, in his admirable book on Insect Fertilization, relates things wonderful on this subject. For example, the species called *Catasetum* has several varieties exclusively staminate (of the male form), so the pollen must be transported to other and pistillate plants, in order to germination. The pollen, instead of being placed where likely to touch a visiting insect, is quite beyond its reach. Nature has therefore endowed the

plant with sensitiveness and power to forcibly eject, or throw out, the waxy seed even to a considerable distance. When, therefore, the definite points of flowers are touched by an insect, the pollen is shot forth like an arrow, having blunt and very sticky points. The little visitor, disturbed by a sharp blow, or having eaten its fill of the inviting nectar, flies to some near pistillate plant, — and, while standing in the same position as before, the seed-bearing end of the pollinia reaches into the stigmatic cavity, and some of the seed is left on its viscid surface. Thus alone (says this learned naturalist) can five varieties of this species be fertilized.

Says one, speaking of Darwin's investigation of the orchids: "Moth-traps and spring-guns set on these grounds," might well be the motto of the flowers. There are channels of approach along which the nectar-loving insects are surely guided, so as to compel them to pass the given spots. There are adhesive plasters nicely adjusted to fit their probosces, or to catch their brows, and so unload their pollen-burden. Sometimes where they enter for the honey, there are hair-triggers carefully set in their necessary path, communicating with explosive shells that project the pollen-stalks with unerring aim upon their bodies."

It has been ascertained, by experiments, that flowers fertilized by the wind rarely if ever have gayly-colored petals. But in plants similar of structure to that of the greater green orchid, the act of fertilization is very simple, and may be imitated by the use of a lead pencil or artist's small brush. In conservatories, to which insects have not access, this is the method.

CYPRIPEDIUM HAYNALDIANUM.

THIS very rare variety — represented in Plate No. XXIII. — was recently brought from abroad, and very little is known of it. The variety is understood to have originated in the island of Borneo. From a cluster of leaves at its base proceeds a lateral flower-stalk, nearly two feet long, downy, and bearing a number of flowers, marked with dark spots, and enriched with many colors. It blossoms late in the fall and winter.

"Some of the tropical species require the temperature and humid atmosphere of the hot-house, while others do best in a lower temperature. The flowers are greatly valued in the winter months for florists' work. Propagated by division of roots and sometimes from seed, but this has not as yet proved very successful."

As there is little to be said about the above imported variety, something in regard to our native species may be interesting here. Says one florist: "The State of New York furnishes six varieties of Cypripedium, all beautiful, charming, and worthy of cultivation. These native species may all be cultivated in the garden by placing them in shady borders. The soil should be liberally mixed with leaf mould. Their unique blossoms render them highly deserving of much care.

"The best time for transplanting them from their native localities is when they are in bloom, and they should be removed with a ball of earth attached to the roots."

PLATE XXIII. CYPRIPEDIUM HAYNALDIANUM.

Another writer tells us that the best time is early spring, when the shoots first appear; but the plants have been moved successfully when in full bloom, as is stated above.

The six varieties which grow wild with us are the *Cypripedium acaule*, *C. pubescens*, *C. parviflorum*, *C. candidum*, *C. arietinum*, *C. spectabile.*

The *C. calceolus* is a European species, resembling our *C. pubescens*, and quite hardy. Says one writer: "There is a lovely orchid (the *C. calceolus*) common in Siberia and Russia, almost up to the arctic circle, but now found only in one Yorkshire station in England, where, like the Perthshire heath, it is rapidly verging to complete local extinction."

The most common in New England is the *C. acaule.* It loves the pine woods, is very handsome and somewhat different from the other varieties; for, if one will notice these flowers closely, they will see that most (if not all, with this exception, the acaule) have a little opening in the top of the slipper, while this variety has the opening the whole length, down to the toe.

Acaule, i. e., stemless. It has been called stemless, the flowers being pendent from a sort of skin, technically called a scape, which is in fact but a flower-stalk supporting no leaves, they springing up from the roots, and hence called radical leaves. It usually blossoms in June. This is rather more difficult of culture than some of the others; it needs a more sandy soil, and to be mulched with pine needles.

The two yellow varieties—*pubescens* and *parviflorum* are very much alike, except in size. Many could not tell the difference. These are the most common, easy of culture, and will live in common garden soil, sometimes for years. They flourish in central New York.

The *C. candidum*—white lady's slipper, is a Western species, small, a low-grower, thriving in cultivation, charming and attractive.

The *C. arietinum*—ram's-head so called, is the smallest and rarest of all; more curious than beautiful, and quite resembles a ram's head.

But we must give the palm to the lovely *C. spectabile*, by far the most showy and stately of all our native species. It is the largest variety among them. It is found in central New York, in woods and marshes, is easily cultivated, and it would be difficult for one to have too many of these charming pets.

It is not easy to obtain all these varieties, unless one goes to regions where they grow wild abundantly; but specimens of all can be obtained from Mr. Menand of Albany, who takes great pride in cultivating this interesting and beautiful family.

Eyes of some men travel far
For the finding of a star;
Up and down the heavens they go,
Men that keep a mighty rout!
I'm as great as they I trow,
Since the day I found thee out,
Charming flower! I'll make a stir
Like a sage astronomer.

Pleasures newly-found are sweet
When they lie about our feet;
February last, my heart
First at sight of thee was glad;
All unheard of as thou art,
Thou must needs, I think, have had
Stately flower, and long ago,
Praise of which I nothing know.

PLATE XXIV

CYPRIPEDIUM SPICERIANUM.

THIS variety — represented by Plate No. XXIV. — is new and rare in this country. Three years ago a single plant sold here for nearly five hundred dollars; now they can be bought for fifty. It is a native of the island of Borneo; it blossoms in midwinter.

Of its superior beauty some just opinion can be formed from the drawing. Of its desirableness in many other respects amateurs will better judge after longer acquaintance. To the author of this work, the whole genus of the Cypripedeæ are the most interesting of all orchids; they are so charming, so suggestive, so wonderful. And this seems to be the opinion of Mr. Rand, who says of a single variety: "This is one of the most extraordinary of orchids. When its flowers expand, the petals are only about an inch long, but in a few days they extend to two feet in length, so that they trail on the ground, unless the plant is placed upon a stand. The sepals and petals are yellowish-brown, the lip reddish-brown."

When the three plates of this publication were drawn, sixteen varieties of Cypripedium were in bloom in the conservatory of Mr. Ames at North Easton.

Yes, lovely flower, I find in thee
Wild sweetness which no words express,
And charms in thy simplicity
That dwells not in the pride of dress.

The following very interesting story, which comes to us from a recent English journal, will give the reader new ideas of Asiatic insect life among flowers, and of the serious difficulties with which researches for new orchid plants are sometimes prosecuted in the East.

"Coryanthes is a superb orchid, abundant in Sante Comapan, but a stranger can hardly guess in what company it is found. At the summit of trees above those which bend over a ravine or rivulet, there are nests inhabited by very large ants. The upper part of these trees is usually covered with Coryanthes, and sometimes an Epidendrum may be seen between their pendent spikes. At first sight this might be taken for a Cypripedium.

"In a sort of pitcher or slipper, sweet-tasting liquid is contained, probably much appreciated by the epicures among the little colonies of ants established in the neighborhood. It is a delicate sweetmeat factory, close at hand. Unfortunately — doubly unfortunately for those who audaciously endeavor to remove a plant from the spot where it grows — the ants have worse stings than our wasps. Neither the explorer nor his assistants dare think of climbing a tree to obtain the elegant ornament which decorates it. The ape-like agility of the wild Indian is required for such an enterprise to be successful.

"There is no other means of obtaining possession of the desired plant than by levelling the tree with a hatchet; but this task is neither free from difficulties nor danger. At each shake which disturbs the tree, the ants become furious. One might imagine that they are aware that their hive or colony

is endangered, and they rush, infuriated and exasperated, upon the daring individual who ventures to disturb their rest.

"Then an extraordinary fight begins. The besieger — attacked on all sides by these little creatures, whose bites, though not deep, are very painful — gets wild, ejaculates at each fresh sting one or other of those energetic oaths, of which the Spanish language offers ample store; then either flies from his tormentors in despair, or plies his axe like a madman, in order to hasten the tree's fall, and put an end to his sufferings.

"When once the tree is felled, he is obliged to work very quickly, for now he has to defend himself against the whole colony. A final blow with the hatchet, having separated from the top a branch bearing the nest,—a lasso is firmly fixed on it, and the whole is dragged to a neighboring stream, where it is left for some hours, with the nest and the terrible colony which inhabit it. When it is believed that this prolonged submersion has put an end to these wretched little animals, it only remains to detach the plants by the aid of a pruning-knife, and the work is over.

"Unfortunately, it seems as if a close connection joints the Coryanthes to the nest, and perhaps to the ants, — like Castor and Pollux of old; for the plant, once drawn from its natural habitat, can no longer thrive, in spite of the help of the old abandoned nest; so that we cannot help concluding that the ants are absolutely necessary to its normal development; but I should hardly be favorable to adding this new insect-vermin to all those already imported. I leave any explanation of the phenomenon to Darwinians, and content

myself with saying that the cultivation of this curious orchid has but rarely succeeded in our conservatories."

Know ye the land where the cypress and myrtle
Are emblems of deeds that are done in their clime;
Where the rage of the vulture, the love of the turtle,
Now melt into sorrow, now madden to crime?
Know ye the land of the cedar and vine,
Where the flowers ever blossom, the beams ever shine;
Where the light wings of Zephyr, oppressed with perfume,
Wax faint o'er the gardens of Gúl in her bloom?
Where the citron and olive are fairest of fruit,
And the voice of the nightingale never is mute;
Where the tints of the earth, and the hues of the sky,
In color though varied, in beauty may vie,
And the purple of ocean is deepest in dye;
Where the virgins are soft as the roses they twine,
And all, save the spirit of man, is divine?
'T is the clime of the East; 't is the land of the sun,
Can he smile on such deeds as his children have done?
O, wild as the accents of lover's farewell
Are the hearts which they bear and the tales which they tell!

BYRON.